

**MORGAN, LEWIS & BOCKIUS, LLP**  
**1117 PENNSYLVANIA AVENUE, NW, WASHINGTON, DC 20004**  
Inventor: Stephen A. JOBLING et al. Serial No. 09/297,703  
Attorney Docket No.: 054163-5001 Page 1 of 33









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FIG. 2-4



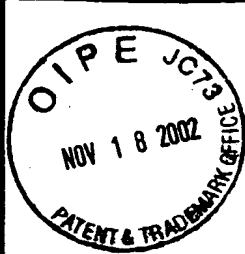
84 10 20 30 40 50 60 70 80 90 100 110 120  
TTAGTTGGCTCAGTTCTCACACTCTCTCTAATCTCTCAGCGAAATGGGACACTACACCATATCAGGAATACGTTTCTTGTGCTCCACTCCGAAATCTCAATCTACCGGCTTCCATGG  
5 TTAGTTGGCTCAGTTCTCACACTCTCTCTAATCTCTCAGCGAAATGGGACACTACACCATATCAGGAATACGTTTCTTGTGCTCCACTCCGAAATCTCAATCTACCGGCTTCCATGG  
1 TTAGTTGGCTCAGTTCTCACACTCTCTCTAATCTCTCAGCGAAATGGGACACTACACCATATCAGGAATACGTTTCTTGTGCTCCACTCCGAAATCTCAATCTACCGGCTTCCATGG  
264 190 200 210 220 230 240 250 260 270 280 290 300  
GGTCTTCTCGAAAGTCATCTCATGAAATCTGACTCCCTCAAAATGTAATGGTCACTGGCTTAAAGAGTCCCTCTCTGATGGTGGATGAATGCTATTCTTCTCAACAGATCAATTTGGA  
185 GGTCTTCTCGAAAGTCATCTCATGAAATCTGACTCCCTCAAAATGTAATGGTCACTGGCTTAAAGAGTCCCTCTCTGATGGTGGATGAATGCTATTCTTCTCAACAGATCAATTTGGA  
181 GGTCTTCTCGAAAGTCATCTCATGAAATCTGACTCCCTCAAAATGTAATGGTCACTGGCTTAAAGAGTCCCTCTCTGATGGTGGATGAATGCTATTCTTCTCAACAGATCAATTTGGA  
444 370 380 390 400 410 420 430 440 450 460 470 480  
GGATGATAAGATTTGTAAGATGAAGTAATAAAGAAATCTGTTCCAAATCGGGAGACAGTTAGCATCCGAAATTTGGATCTAAACCAAGGTCATTCCTCCACCCGGCAGAGGGCAAAG  
365 GGATGATAAGATTTGTAAGATGAAGTAATAAAGAAATCTGTTCCAAATCGGGAGACAGTTAGCATCAGAAATTTGGATCTAAACCAAGGTCATTCCTCCACCCGGCAGAGGGCAAAG  
361 GGATGATAAGATTTGTAAGATGAAGTAATAAAGAAATCTGTTCCAAATCGGGAGACAGTTAGCATCAGAAATTTGGATCTAAACCAAGGTCATTCCTCCACCCGGCAGAGGGCAAAG  
624 550 560 570 580 590 600 610 620 630 640 650 660  
ACAGTACAAAGACTCCGAGAAGAAATTCACAAAGTAAAGGTAAGTGGATGCAATTTCTCGTGGCTATGAAAGTTTGGTTTCTCAGCAGTGAACAGAGGAATAACTTATAGAGAGTG  
545 ACAGTACAAAGACTCCGAGAAGAAATTCACAAAGTAAAGGTAAGTGGATGCAATTTCTCGTGGCTATGAAAGTTTGGTTTCTCAGCAGTGAACAGAGGAATAACTTATAGAGAGTG  
541 ACAGTACAAAGACTCCGAGAAGAAATTCACAAAGTAAAGGTAAGTGGATGCAATTTCTCGTGGCTATGAAAGTTTGGTTTCTCAGCAGTGAACAGAGGAATAACTTATAGAGAGTG  
804 730 740 750 760 770 780 790 800 810 820 830 840  
AGATGTCATGACTCAGATGAGTGTGGTCTGGGAGATCTTTTGGCGAATATGCGAGATGGTTCAACCAATTTCCCAATGGTTCTCGAGTAAAGATACGCATGGATCTCCATCTGG  
725 AGATGTCATGACTCAGATGAGTGTGGTCTGGGAGATCTTTTGGCGAATATGCGAGATGGTTCAACCAATTTCCCAATGGTTCTCGAGTAAAGATACGCATGGATCTCCATCTGG  
721 AGATGTCATGACTCAGATGAGTGTGGTCTGGGAGATCTTTTGGCGAATATGCGAGATGGTTCAACCAATTTCCCAATGGTTCTCGAGTAAAGATACGCATGGATCTCCATCTGG  
984 910 920 930 940 950 960 970 980 990 1000 1010 1020  
ATATAATGGCATATACATGATCTCTCCCGAGGAGAGAGTATGTTCAAAATCTCAGCCAAAGAGACCAAAATCACTTCGGATTATGAGTCGCACGCTTGGAAATGAGTAGTACGGA  
905 ATATAATGGCATATACATGATCTCTCCCGAGGAGAGAGTATGTTCAAAATCTCAGCCAAAGAGACCAAAATCACTTCGGATTATGAGTCGCACGCTTGGAAATGAGTAGTACGGA  
901 ATATAATGGCATATACATGATCTCTCCCGAGGAGAGAGTATGTTCAAAATCTCAGCCAAAGAGACCAAAATCACTTCGGATTATGAGTCGCACGCTTGGAAATGAGTAGTACGGA

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FIG. 3-1

FIG. 3-1	FIG. 3-2
FIG. 3-3	FIG. 3-4

FIG. 3



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130	140	150	160	170	180
TGATCGAAGGACCTCCTCTTGGCTTTCCTTCAACTCAAGAAGGGCGGCTTTCTTAGGAG csbe2con. seq					
CGATCCGAGGACCTCCTCTTGGCTTTCCTTCAACTCAAGAAGGAGGGCGGCTTTCTTAGGAG 20con. seq					
TGATCGAAGGACCTCCTCTTGGCTTTCCTTCAACTCAAGAAGGGCGGCTTTCTTAGGAG 35con. seq					
310	320	330	340	350	360
AGCCCTGGCACAGTTTCAGAAAGTCCAGGCTTACTGATGTTGAGAGTCTCATTAT csbe2con. seq					
AGCCCTGGCACAGTTTCAGAAAGTCCAGGCTTACTGATGTTGAGAGTCTCATTAT 20con. seq					
AGCCCTGGCACAGTTTCAGAAAGTCCAGGCTTACTGATGTTGAGAGTCTCATTAT 35con. seq					
490	500	510	520	530	540
AATATATGACATAGATCCAAAGCTTGACAGGCTTTCGTCAACACCTAGATTACCGGTATTTC csbe2con. seq					
AATATATGACATAGATCCAAAGCTTGACAGGCTTTCGTCAACACCTAGATTACCGGTATTTC 20con. seq					
AATATATGACATAGATCCAAAGCTTGACAGGCTTTCGTCAACACCTAGATTACCGGTATTTC 35con. seq					
670	680	690	700	710	720
GGCACAGGAGCTACGTGGGCTGCATTGATTGGAGATTTCAATAACTGGAATCCTTAATGC csbe2con. seq					
GGCACAGGAGCTACGTGGGCTGCATTGATTGGAGATTTCAATAACTGGAATCCTTAATGC 20con. seq					
GGCACAGGAGCTACGTGGGCTGCATTGATTGGAGATTTCAATAACTGGAATCCTTAATGC 35con. seq					
850	860	870	880	890	900
CAACAAAGATTCTATTCCTGCTGGATCAAGTTCTCAGTTCAAGCACCAGGTGAACCTCCC csbe2con. seq					
CAACAAAGATTCTATTCCTGCTGGATCAAGTTCTCAGTTCAAGCACCAGGTGAACCTCCC 1805					
CAACAAAGATTCTATTCCTGCTGGATCAAGTTCTCAGTTCAAGCACCAGGTGAACCTCCC 35con. seq					
1030	1040	1050	1060	1070	1080
GCCAGTAATTAAACACATATGCCAACTTTAGAGATGATGCTGCTTCCTCGCATCAAAAAGCT csbe2con. seq					
GCCAGTAATTAAACACATATGCCAACTTTAGAGATGATGCTGCTTCCTCGCATCAAAAAGCT 20con. seq					
GCCAGTAATTAAACACATATGCCAACTTTAGAGATGATGCTGCTTCCTCGCATCAAAAAGCT 35con. seq					

FIG. 3-2



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1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1190
1164	TGGCTACAAATGCTGTT	CAGCTCATGGCTATTT	CAAGAGCATTCATAT	TATGCTAGTTT	GGGTATACAGT	CACAAA	CTTTT	ATGCAGCTAG	CAGCCGATTT	TGGAACTCCTG	
1085	TGGCTACAAATGCTGTT	CAGCTCATGGCTATTT	CAAGAGCATTCATAT	TATGCTAGTTT	GGGTATACAGT	CACAAA	CTTTT	ATGCAGCTAG	CAGCCGATTT	TGGAACTCCTG	
1081	TGGCTACAAATGCTGTT	CAGCTCATGGCTATTT	CAAGAGCATTCATAT	TATGCTAGTTT	GGGTATACAGT	CACAAA	CTTTT	ATGCAGCTAG	CAGCCGATTT	TGGAACTCCTG	
1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370	
1344	CCATGCATCAACTAAT	ACGTTGGATGGCTG	AATATGTTT	GATGGTACGAT	GGTCACTAC	TTTCACTCT	GGACCACGG	GGTCACTAT	TGGATGT	GGGACTCTCGCC	TTT
1265	CCATGCATCAACTAAT	ACGTTGGATGGCTG	AATATGTTT	GATGGTACGAT	GGTCACTAC	TTTCACTCT	GGACCACGG	GGTCACTAT	TGGATGT	GGGACTCTCGCC	TTT
1261	CCATGCATCAACTAAT	ACGTTGGATGGCTG	AATATGTTT	GATGGTACGAT	GGTCACTAC	TTTCACTCT	GGACCACGG	GGTCACTAT	TGGATGT	GGGACTCTCGCC	TTT
1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550	
1524	GTTTGAATGGGTT	CAGATTTGATGGG	TCAATGATGTAC	ACCCATCA	CGGATTCG	AGGTAGATTT	ACCGGCA	CTACAA	TGAATGA	ATGCAACTGATG	
1445	GTTTGAATGGGTT	CAGATTTGATGGG	TCAATGATGTAC	ACCCATCA	CGGATTCG	AGGTAGATTT	ACCGGCA	CTACAA	TGAATGA	ATGCAACTGATG	
1441	GTTTGAATGGGTT	CAGATTTGATGGG	TCAATGATGTAC	ACCCATCA	CGGATTCG	AGGTAGATTT	ACCGGCA	CTACAA	TGAATGA	ATGCAACTGATG	
1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730	
1704	TGGTGAAGATGTT	AGTGAATGCCA	ACAGTTTCCG	TTTGAAGATGG	TGGTGGCTT	GATTTGATTA	TCGTCTCC	ACATGGCT	GTTCGTG	ATAAATGGGTTGAGATTA	
1625	TGGTGAAGATGTT	AGTGAATGCCA	ACAGTTTCCG	TTTGAAGATGG	TGGTGGCTT	GATTTGATTA	TCGTCTCC	ACATGGCT	GTTCGTG	ATAAATGGGTTGAGATTA	
1621	TGGTGAAGATGTT	AGTGAATGCCA	ACAGTTTCCG	TTTGAAGATGG	TGGTGGCTT	GATTTGATTA	TCGTCTCC	ACATGGCT	GTTCGTG	ATAAATGGGTTGAGATTA	
1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	
1884	AAAGTGTGTTT	CTTATGCTGAA	AGTCATGAC	AGGCCCTT	GTGGTGAC	AAACTATT	GCATTTT	GGCTGAT	GGACAGGATAT	GTATGACTTCAT	GGCTCGTGACAGAC
1805	AAAGTGTGTTT	CTTATGCTGAA	AGTCATGAC	AGGCCCTT	GTGGTGAC	AAACTATT	GCATTTT	GGCTGAT	GGACAGGATAT	GTATGACTTCAT	GGCTCGTGACAGAC
1801	AAAGTGTGTTT	CTTATGCTGAA	AGTCATGAC	AGGCCCTT	GTGGTGAC	AAACTATT	GCATTTT	GGCTGAT	GGACAGGATAT	GTATGACTTCAT	GGCTCGTGACAGAC
1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	
2064	CGGAGAAGGATATTT	GAAATTTTAT	GGGAAATGA	ATTTGGACA	CTTGGATGG	ATTTTCC	AAGGATCC	CAATCTCC	CAATCTCC	CAATCTCC	CAATCTCC
1985	CGGAGAAGGATATTT	GAAATTTTAT	GGGAAATGA	ATTTGGACA	CTTGGATGG	ATTTTCC	AAGGATCC	CAATCTCC	CAATCTCC	CAATCTCC	CAATCTCC
1981	CGGAGAAGGATATTT	GAAATTTTAT	GGGAAATGA	ATTTGGACA	CTTGGATGG	ATTTTCC	AAGGATCC	CAATCTCC	CAATCTCC	CAATCTCC	CAATCTCC
2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	
2244	GCAAGAGTTTGAT	CAAGCAAT	CAATCTTT	GAGAGG	CCCTAT	GGTTT	TCATG	ACTTCT	CTGAGCA		
2165	GCAAGAGTTTGAT	CAAGCAAT	CAATCTTT	GAGAGG	CCCTAT	GGTTT	TCATG	ACTTCT	CTGAGCA		
2161	GCAAGAGTTTGAT	CAAGCAAT	CAATCTTT	GAGAGG	CCCTAT	GGTTT	TCATG	ACTTCT	CTGAGCA		

FIG. 3-3





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1200	1210	1220	1230	1240	1250	1260	
ATGATTAAAGTCCCTAGTAGATAAAGCTCAGAGTTAGGTTCTTTGTTCTCTCATGGATATTTGTTTCATAG csbe2con. seq							
ATGATTAAAGTCTCTAATAGATAAAGCTCAGAGTTAGGTTCTTTGTTCTCTCATGGATATTTGTTTCATAG 20con. seq							
ATGATTAAAGTCTCTAATAGATAAAGCTCAGAGTTAGGTTCTTTGTTCTCTCATGGATATTTGTTTCATAG 35con. seq							
1380	1390	1400	1410	1420	1430	1440	
TCAACTATGGGAGCTGGGAGTTCTTAAGTTCTTTTCAAAATCAAGGTGGTGGTGGATGAGTACAA csbe2con. seq							
TCAACTATGGGAGCTGGGAGTTCTTAAGTTCTTTTCAAAATCAAGGTGGTGGTGGATGAGTACAA 20con. seq							
TCAACCATGGGAGCTGGGAGTTCTTAAGTTCTTTTCAAAATCAAGGTGGTGGTGGATGAGTACAA 35con. seq							
1560	1570	1580	1590	1600	1610	1620	
TAGATGCTGTGGTTTATCTGATGCTGTGGAATGATATGATTCATGCTCTTCCAGAGGCTGTGCACCAT csbe2con. seq							
TAGATGCTGTGGTTTATCTGATGCTGTGGAATGATATGATTCATGCTCTTCCAGAGGCTGTGCACCAT 20con. seq							
TAGATGCTGTGGTTTATCTGATGCTGTGGAATGATATGATTCATGCTCTTCCAGAGGCTGTGCACCAT 35con. seq							
1740	1750	1760	1770	1780	1790	1800	
TTTCAAGAGAGATGAAGATTGGAAATGGGTGACATTGTACATATGCTGACCAACAGCGGTGGTTGGA csbe2con. seq							
TTTCAAGAGAGATGAAGATTGGAAATGGGTGACATTGTACATATGCTGACCAACAGCGGTGGTTGGA 20con. seq							
TTTCAAGAGAGATGAAGATTGGAAATGGGTGACATTGTACATATGCTGACCAACAGCGGTGGTTGGA 35con. seq							
1920	1930	1940	1950	1960	1970	1980	
CATCTACTCTCTTATAGATCGTGGATAGCAATTCACAAATGATCAGGCTTATACCATGGCTTAGG csbe2con. seq							
CATCTACTCTCTTATAGATCGTGGATAGCAATTCACAAATGATCAGGCTTATACCATGGCTTAGG 1805							
CATCTACTCTCTTATAGATCGTGGATAGCAATTCACAAATGATCAGGCTTATACCATGGCTTAGG 35con. seq							
2100	2110	2120	2130	2140	2150	2160	
AACCAGTTATGATAAATGCCCTCTAGATTGATCTAGCTAGCTACATCTTACATATCATGGAAT csbe2con. seq							
ATTACAGTTATGATAAATGCCCGGTAGTTGATCTAGGCAATTCAAAGCTCTGAGATATCATGGAAT 20con. seq							
ATTACAGTTATGATAAATGCCCGGTAGTTGATCTAGGCAATTCAAAGCTCTGAGATATCATGGAAT 35con. seq							

csbe2con. seq  
20con. seq  
35con. seq

FIG. 3-4



120  
CTCTCTAACTTCTCAGCGAAATGGGACACTACACCATATCAGGAATACGTTTTCCTTGTCTCCACTCTGCAAAATCTCAATCTACGGCTTCCATGGCTATCGGAGGACCTCTCTTGGC  
GAGAGATTGAAGA??GCTTTACCCCTGTGATGTGGTATAGTCTCTTATGCAAAAGGAACAGGAGGTGAGACGT??AGAGTTAGATGGCCGGAAGTACCGATAGCTCTCTGGAGGAGAACGG  
M G H Y T I S G I R F P C A P L C K S O S T G F H G Y R R T S S C  
240  
TTTTCCTTCAACTTCAAGGAGCGCTTTCTPAGGAGGCTTCTCTGGAAAGTCATCTCATGAATCTGACTCTCAATGTAATGGTCACTGCTTCTAAAAGAGTCTCTCTGATGGTCCGA  
AAAGGAAGTTGAAGTTCTCCGCAAAAGATCTCCAGAGAGACCTTTTCAGTAGAGTACTTAGACTGAGGAGTTTACATTTACCACTGACGAGAGATTTTCTCAGGAAGGACTACCAGCCT  
L S F N F K E A F S R R V F S G K S S H E S D S S N V M V T A S K R V L P D G R  
360  
TTGAATGCTATTCTTCTCAACAGATCAATTGGAGCCCCCTGGCACAGTTTTCAGAAAGTCCAGGTGCTTACTGATGTTGAGAGTCTCATTTATGGATGATAAGATTGTTGAAGATGAAG  
AACTTACGATAAGAAGTGTCTAGTTAAACCTTCGGGACCGTGTCAAGTCTTCTTAGGTCACGAAATGACTACAACTCTCAGAGTAATACCTACTATTCTAACAACCTTCTACTTC  
I E C Y S S S T D O L E A P G T V S E E S O V L T D V E S L I M D D K I V E D E  
Xmn I  
480  
TAAATAAGATCTGTTCCTCAATGCGGGAGACAGTTAGCATCAGAAATAATGGATCTAAACCAAGTCCATTCCTCCACCCGCGAGAGGCAAGAAATATATGACATAGATCCAAGCTTGA  
ATTATTCTTACACAAGTTACGCCCTCTGTCAATCGTAGTCTTTTAACTAGATTTGGTTCCAGGTAAAGAGGTGGCGCTCTCCCGTTTCTTATATACTGTATCTAGGTTTCGAAC  
V N K E S V P M R E T V S I R K I G S K P R S I P P G R G O R I Y D I O P S L  
Hinc II  
10/33  
600  
CAGGCTTTCGTCAACACCTAGATTACCGGTATTCAACAGTACAAAGACTCCGAGAGAAATTCACAAGTATGAAGGTAGTCTGGATGCAATTTTCTCGTGGCTATGAAAAGTTTGGTTTCT  
GTCCGAAGACAGTTGTGATCTAATGGCCATAAGTCTCATGTTTCTGAGGCTCTCCTTTAACTGTTTCAATCTCCATCAGACCTACGTAAGAGAGACCGGATACCTTTTCAACCAAGA  
T G F R O H L D Y R Y S O Y K R L R E E I O K Y E G S L O A F S R G Y E K F G F  
CAGCGAGTAAACAGGAATAACTTATAGAGAGTGGCACCAGGAGCTACGTGGCTGCAATTCATTTGAGATTTCATAACTGGAATTCCTAATGCAGATGTCATGACTCAGAATGAGTGTG  
GTGCGTCACTTTGTCCTTATTGAATATCTCTCACCCGTTGGTCTCGATGCACCCGACGTAACCTCTAAAGTTATTGACCTTAGGATTACGTCACAGTACTGAGTCTTACTCACAC  
S R S E T G I T Y R E W A P G A T W A A L I G D F N N W N P N A D V M T O N E C  
Nco I  
720

FIG. 4-1  
FIG. 4-2  
FIG. 4-3  
FIG. 4-4  
FIG. 4

FIG. 4-1

Bgl II

FIG. 4-2



**MORGAN, LEWIS & BOCKIUS, LLP**  
**PENNSYLVANIA AVENUE, NW, WASHINGTON, DC 20004**  
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125+94. seq r1320 r1330 r1340 r1350 r1360 r1370 r1380  
TGGAGGCTTCAACAGGCTTAGTCATGATGCCGAGCATTACCTTTGACGGGTGGTATGATAACCGGCCT  
116. seq TGGAGGCTT CAGGCTTAGTCATGATGC GAGCATTCA CTTTGA GGGTGGTA GATAACCGGCCT  
TGGAGGCTTTGGCAGGCTTAGTCATGATGCAGAGCATTACCTTTGAAGGGTGGTACGATAACCGGCCT  
r2400 r2410 r2420 r2430 r2440 r2450 r2460  
r1390 r1400 r1410 r1420 r1430 r1440 r1450  
125+94. seq CGGTCCCTTCATGGTATATGCACCATCTAGGACAGCAGTGGTCCATGCTTTAGTAGAAGATGAAG  
CGGTCCCTTCATGGTATATGCACCATCTAGGACAGCAGTGGTCCATGCTTTAGTAGAAGATGAAG  
116. seq CGGTCCCTTCATGGTATATGCACCATCTAGGACAGCAGTGGTCCATGCTTTAGTAGAAGATGAAG  
r2470 r2480 r2490 r2500 r2510 r2520 r2530

FIG. 5-3

**MORGAN, LEWIS & BOCKIUS, LLP**  
**1117 PENNSYLVANIA AVENUE, NW, WASHINGTON, DC 20004**  
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FIG. 6

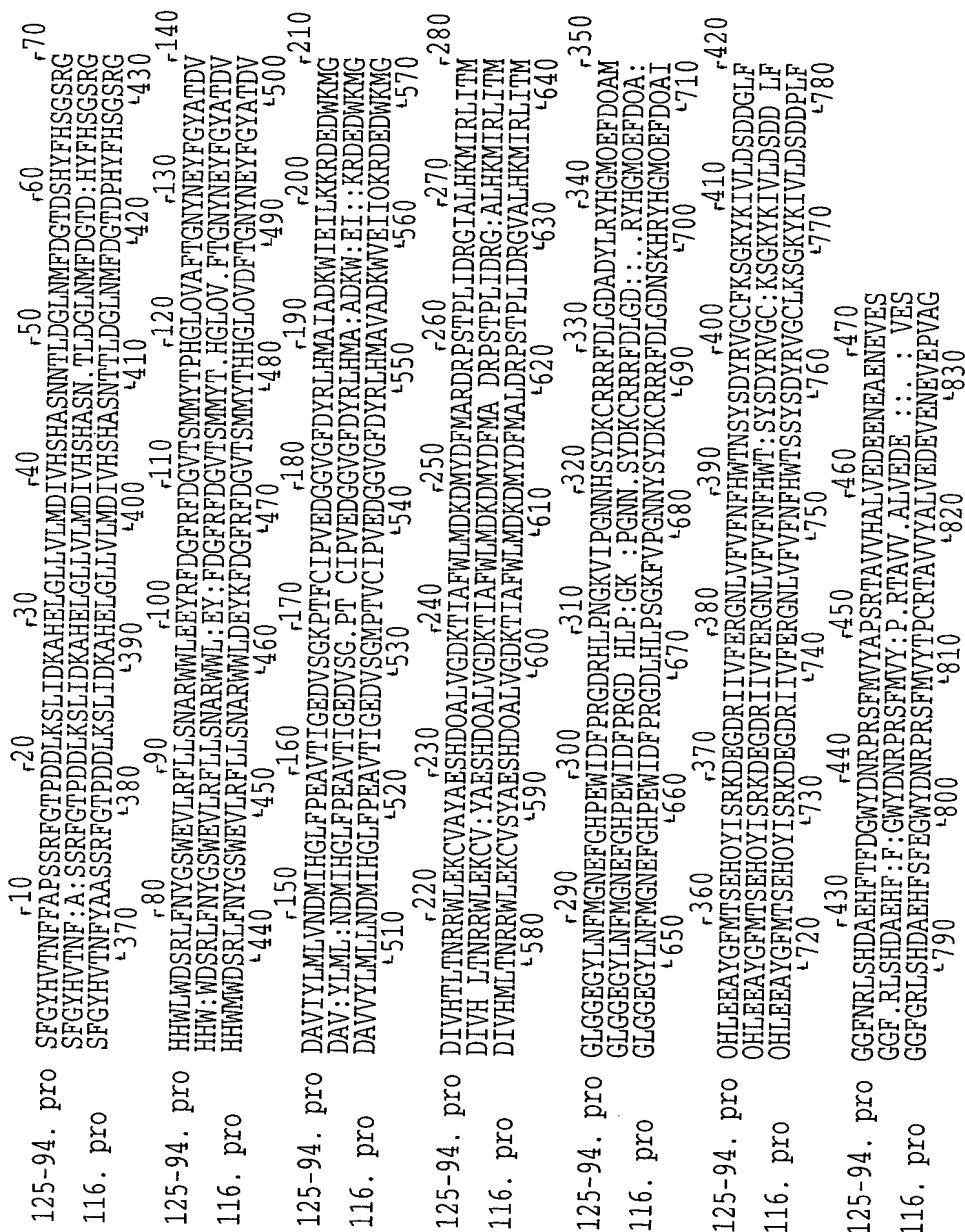
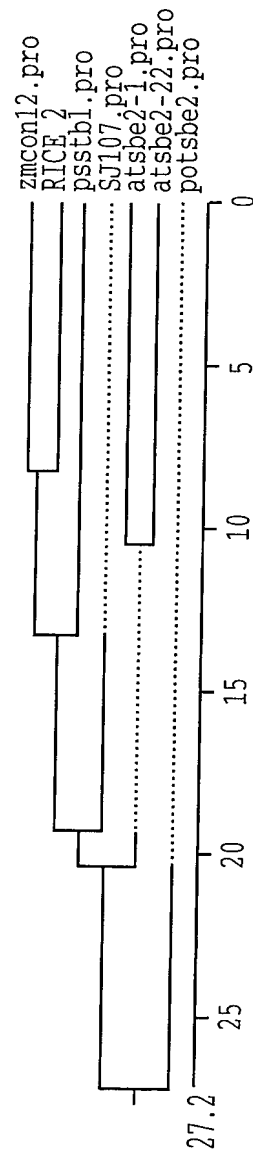


FIG. 7





[illegible][illegible][illegible]

FIG. 8

FIG. 8-1

FIG. 8-3	FIG. 8-4
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FIG. 8-5	FIG. 8-6
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FIG. 8-7	FIG. 8-8
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FIG. 8-1



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YSSDSSSVAAASEK--VLVPG	Majority	SJ107.pro
60	70	potsbe2.pro
HESSDSSNVNVTASKR--VLPPDG		psstbl.pro
YNSSEFRPSTVAASGK--VLVPPG		atsbe2-1
YRDSSETKSSSTIAESDK--VLIPPE		atsbe2-2
YDSDSSSLATITASEK--L--RPG		zmcon12.pro
AEFDSSSSOARAAASAKAVMMIPE		RICE 2
CSCCTHGAAMRAAGAS-GEVMMIPE		
GSGGGRVAVRAAGAS-GEVMMIPE		
-----VNTTEEOKK--	Majority	
140	150	
ELDFASSSLOLOEGGKLEESKTL		SJ107.pro
EKGSVTSSSLVDVNTDTOAKKKT		potsbe2.pro
-----ISYKEDFAKMM		psstbl.pro
-----VRTEDOTMNV		atsbe2-1
ELA-----		atsbe2-2
YEGGLEAFSRGYEKFGRFSAT		zmcon12.pro
220	230	RICE 2
YEGGLEAFSRGYEKFGRFSAT		Majority
220	230	
YEGGLEAFSRGYEKFGRFSAT		SJ107.pro
YEGGLEAFSRGYEKFGRFSAT		potsbe2.pro
YEGGLEAFSRGYEKFGRFSAT		psstbl.pro
YEGGLEAFSRGYEKFGRFSAT		atsbe2-1
YEGGLEAFSRGYEKFGRFSAT		atsbe2-2
YEGGLEAFSRGYEKFGRFSAT		zmcon12.pro
YEGGLEAFSRGYEKFGRFSAT		RICE 2

FIG. 8-2



199  
233  
221  
209  
173  
174  
200

279  
313  
301  
289  
253  
254  
280

359  
393  
381  
369  
333  
334  
360

FIG. 8-3

**MORGAN, LEWIS & BOCKIUS, LLP**  
**PENNSYLVANIA AVENUE, NW, WASHINGTON, DC 20004**  
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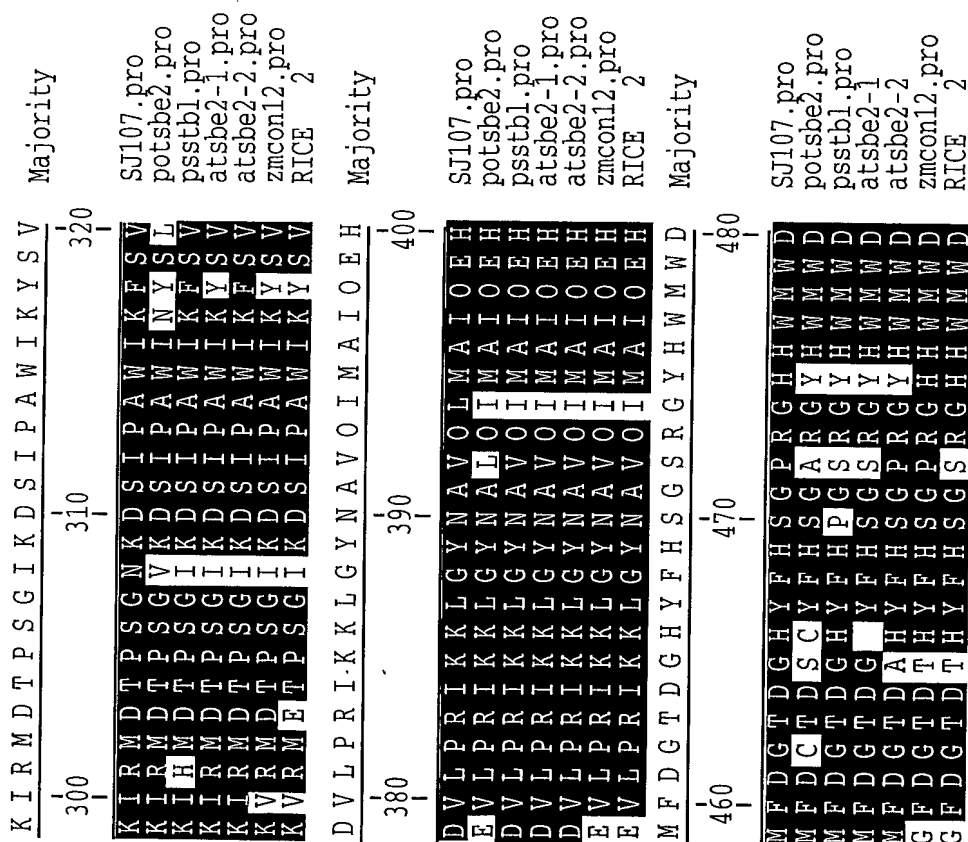


FIG. 8-4



SR LFN Y G S W E V L R Y L L S N A R W W L E E Y K F D G G F R F D G V T S M M Y T H H G L O V G F T G N Y N E Y F G

490 500 510 520 530

SR LFN Y G S W E V L R Y L L S N A R W W L E E Y K F D G G F R F D G V T S M M Y T H H G L O V G F T G N Y N E Y F G

439 473 461 449 413 414 440

Y P E A I T I G E D V S G M P T F C L P V O D G G V G F D Y R L H M A V A D K W I E L L K K R D E D W K M G D I V H T

570 580 590 600 610

Y P E A I T I G E D V S G M P T F C L P V O D G G V G F D Y R L H M A V A D K W I E L L K K R D E D W K M G D I V H T

389 353 341 329 293 294 320

V G D K K T I A F W L M D K D M Y D F M A L D R P S T P L I D R G I A L H K M I R L I T M G L G G E G Y L N F M G N E F

650 660 670 680 690

V G D K K T I A F W L M D K D M Y D F M A L D R P S T P L I D R G I A L H K M I R L I T M G L G G E G Y L N F M G N E F

599 633 621 609 573 574 600

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FIG. 8-5

**MORGAN, LEWIS & BOCKIUS, LLP**  
**111 PENNSYLVANIA AVENUE, NW, WASHINGTON, DC 20004**  
Inventor: Stephen A. JOBLING et al. Serial No. 09/297,763  
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**MORGAN, LEWIS & BOCKIUS, LLP**  
**111 PENNSYLVANIA AVENUE, NW, WASHINGTON, DC 20004**  
Inventor: Stephen A. JOBLING *et al.* Serial No. 09/297,703  
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[illegible]

FIG. 10-1

FIG. 10-2

# FIG. 10

FIG. 10-1

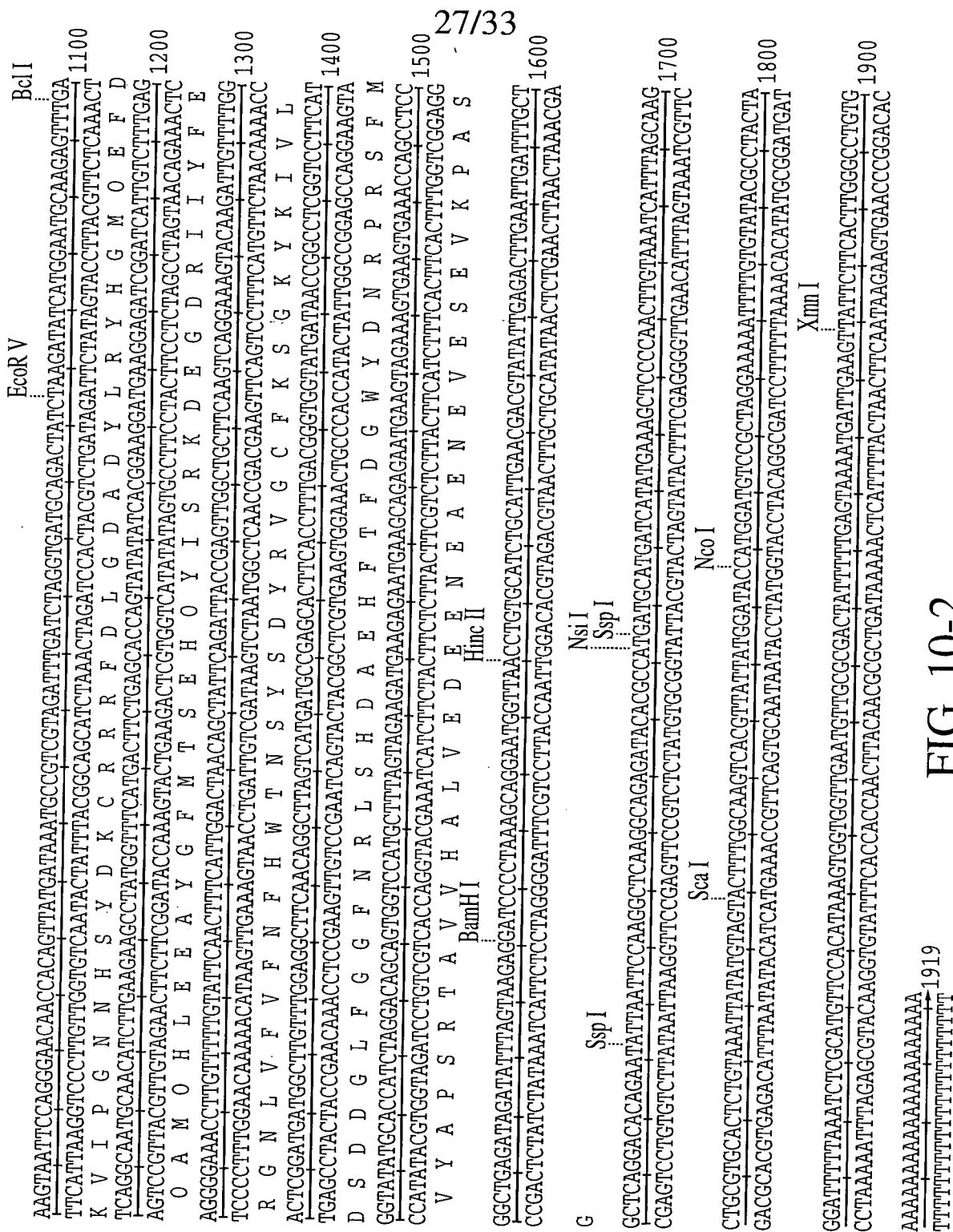


FIG. 10-2



**MORGAN, LEWIS & BOCKIUS, LLP**  
**111 PENNSYLVANIA AVENUE, NW, WASHINGTON, DC 20004**  
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T C A T C A T T G G T T G T G G A C T C T C G C C T T T T C A A C T A T T G G A A G C T G G A G G T G C T A A G A T T T C T T T C A A A T G C A A G A T G G T G G T T G G A A G A G A T A C A G G T T T G A T G G T T T T A G A T T T G A 1560  
A G T A G T A A C C A C A C C C T G A G A G G G A A A G T T G A T A C C T T C G A C C C T C C A G A T T C T A A A G A A A A G T T A C G T T C T A C C A C C A A C C T T C T C A T G T C C A A A C T A C C A A A A T C T A A A C T  
H H W L W D S R L F N Y G S W E V L R F L L S N A R W W L E E Y R F D G F R F D  
Sca I  
T G G G T G A C T T C C A T G A T F A C A C T C C C C C A T G G G T T G C A G T A G C T T T T A C T G G C A A C T A C A A T G A T A C T T T G G A T A T C C A A C T G A T G A T G C T G T G A T T T A T T T G A T G C T T G T G A A 1680  
A C C C C A C T G A A G G T A C A T G T G A G G G T A C C C A A C G T C C A T C G A A A T G A C C G T T G A T G T T A C T C A T G A A A C C T A T A C G T T G A C T A C A T C T A C G A C A C T A A A T A A A C T A C G A A C A C T T  
G V T S M M Y T P H G L O V A F T G N Y N E Y F G Y A T D V D A V A Y L M L V N  
T G A T A T G A T T C A C G G T C T T T C C C T G A G G T G T T A C C A T T G G T G A A G A T G T T G C A T T C C A G T G G A A G A T G G T G T G T T G G A T T T G A T T A C C G T C T C C A C A T  
A C T A T A C T A A G T C C A G A A A G G G A C T C C G A C A A T G G T A A C C A C T T C T A C A A T C G C C T T T C G G T T G T A A A C G T A A G G T C A C C T T C T A C C A C A C A C C T A A A C T A A T G G C A G A G G T G T A 1800  
D M I H G L F P E A V T I G E D V S G K P T F C I P V E D G G V G F D Y R L H M  
G G C C A T T G C C G A T A A A T G G A T T G A T T C T T A A G A A G A G A T G A G G A C T G G A A A A T G G G T G A C A T T G T G C A T A C A C T C A C C A C A G A A G G T G G T T G G A A A A A T G T G T T G C T T A T G C T G A 1920  
T T C A G T A C T G G T C G A G A A C A C C A C T C T T T T G A T A A C G T A A A C C G A C T A C C T G T T C C T G T A C A T G C T G A A G T A C C G A C A C T G T C T G G A G A T A G A G G A A T A T C T A G A C C T T A T C G  
A I A D K W I E I L K K R D E D W K M G D I V H T L T N R R W L E K C V A Y A E  
A A G T C A T G A C C A A G C T C T T G T T G G T G A C A A A A C T A T T G C A T T T T G C T G A T G G A C A A G G A C A T T A C G A C T T C A T G G C T C G T G A C A G A C C A C T A C T A C C T C T T A T A G A T C G T G G A A T A G C  
T T C A G T A C T G G T C G A G A A C A C C A C T C T T T T G A T A A C G T A A A C C G A C T A C C T G T T C C T G T A C A T G C T G A A G T A C C G A C T G T C T G T A G A T G A G G A G A A T A T C T A C C A C C T T A T C G 2040  
S H D O A L V G D K T I A F W L M D K D M Y D F M A R D R P S T P L I D R G I A  
Bcl I Nco I  
A T T G C A C A A A A T G A T C A G G C T T A T T A C C A T G G G C T T A G G C G G A A G G A T A T T T G A A T T T T A T G G G A A T G A A T T T G G A C A T C C T G A T G G A T T G A T T T T C C A A G A G G G A T C G A C A T C T 2160  
T A A C C T G T T T A C T A G T C C G A A T A T G G T A C C C G A A T C C G C C T C T C T A T A A A C T T A A A A T A C C C T T T A C T T A A C C T G A G G A C T C A C C T A A C T A A A A G G T T C T C C C C T A G C T G T A G A  
L H K M I R L I T M G L G G E G Y L N F M G N E F G H P E W I D F P R G D R H L  
Bcl I  
G C C C A T G G T A A A G T A A T T C C A G G G A A C A C C A C A G T T A T G A T A A A T G C C G T C G T A G A T T T G A T C T A G T G A T G C A G A C T A T C T A A G A T A T C A T G A A T G C A A G A T T T G A T C A G G C A A T 2280  
C G G G T T A C C A T T T C A T T A A G G T C C C T T G T T G G T G C A A T A C T A T T T A C G G C A G C A T C T A A A C T A G A T C A C C A C T A C G T C T G A T A G A T T C T A T A G T A C C T T A C G T T C T C A A A C T A G T C C G T T A  
P N G K V I P G N N H S Y D K C R R R F D L G D A D Y L R Y H G M O E F D O A M

FIG. 13-3





2400  
GCAACATCTTGAAGAAGCCCTATGGTTTCATGACTTCTGAGCACCAGTATATATACCGAAGGATCAAGGAGATCGGATCATTTGTCTTTGAGAGGGGAAACCTTGTGTTTGTATTCAACTT  
CGTTGTAGAACTTCTTCGGATACCAAAAGTACTGAAAGACTCGTGGTCATATATAGTGCCTTCTTCTAGCCTAGTAACAGAAACTCTCCCTTTGGAAACAAAACATAAGTTGAA  
O H L E E A Y G F M T S E H O Y I S R K D E G D R I I V F E R G N L V F V F N F  
2520  
TCATTGGACTAACAGCTATTACAGATTACCGAGTTGGCTGCTTCAAGTCAGGAAAGTACAAAGATTGTTTGGACTCGGATGATGGCTTGTGGAGGCTTCAACAGGCTTAGTCATGATGC  
AGTAACCTGATTGTTCGATAAGTCTAAATGGCTCAACCGACGAAAGTTTCAGTCTCTTTCATGTTTCAACAAACCTGAGCCCTACTACCGAACAACCTCCGAAAGTTGTCCGAATCAGTACTACG  
H W T N S Y S D Y R V G C F K S G K Y K I V L D S D D G L F G G F N R L S H D A  
2640  
CGAGCACTTACCTTGACGGGTGGTATGATAACCGGCTCGGTCTTCATGGTATATGACCATCTAGGACAGCAGTGGTCTATGCTTTAGTAGAAGATGAAGAGAAATGAAGCAGAGAA  
GCTCGTGAAGTGGAAACTGCCCAACCATACTATTGGCCGGAGCCAGGAAGTACCATATACGTGGTAGATCTGTCGTACACAGATACGAAATCATCTCTTACTTCTTACTTCTGCTCTCTT  
E H F T F D G W Y D N R P R S F M V Y A P S R T A V V Y A L V E D E E N E A E N  
BamHI  
Hinc II  
2760  
TGAAGTAGAAAGTGAAGTGAAACAGCCCTCCGGCTGAGATAGATATTTAGTAAGAGGATCCCTTAAAGCAGGAATGTTAACCTGTGCATCTGCATTGAACGACGTATATTGAGACTGGA  
ACTTCATCTTTTCACTTCACTTTGGTCCGAGGCGGACTCTATCTATATAAATCATTTCTCTAGGGGATTTCTGCTTACCAATGGACAGCTAGACGTAACCTTGTGTCATATACTCTGACCT  
E V E S E V K P A S G  
SalI  
Nde I  
Xba I  
Hinc III  
Pst I  
2805  
AATCCATATGACTAGTAGATCCCTCTAGAGTCGACCTGCAGGCATG  
TTAGGTATACATGATCATCTAGGAGATCTCAGCTGGACGTCGGTAC

FIG. 13-4